

FORM PTO-1390 (REV. 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER PTT-122 (402539US)
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/936110
INTERNATIONAL APPLICATION NO. PCT/EP00/01348	INTERNATIONAL FILING DATE 18 February 2000	PRIORITY DATE CLAIMED 10 March 1999	
TITLE OF INVENTION ENCODING USER SUBSCRIPTION IN IP ADDRESS			
APPLICANT(S) FOR DO/EO/US BLOM, Marcus Anthonius			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<ol style="list-style-type: none"> <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31). <input type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). <input type="checkbox"/> has been communicated by the International Bureau. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). <ol style="list-style-type: none"> <input type="checkbox"/> is attached hereto. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4). <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). <input type="checkbox"/> have been communicated by the International Bureau. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. <input type="checkbox"/> have not been made and will not be made. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)). <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 			
<p>Items 11 to 20 below concern document(s) or information included:</p> <p>with form PTO/SB/08B, International Search Report and three (3) cited references.</p> <ol style="list-style-type: none"> <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. <input type="checkbox"/> A substitute specification. <input type="checkbox"/> A change of power of attorney and/or address letter. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4). <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). <input checked="" type="checkbox"/> Other items or information: postcard receipt, Cover Letter, Application Data Sheet, International Publication No. WO 00/54477 with One (1) sheet of drawings (FIGS. 1-2), Notification of International Application Number and International Filing Date with copy of PCT Request (5 pps.), PCT Demand (5 pps.), Notification of Receipt of Demand (1 pp.), PCT Written Opinion with Annex D4 (24 pps.), Notification of Transmittal of International Preliminary Examination Report with amended sheets (22 pps.), Submission of Priority Document (2 pps.), Certified copy (with English translation) of Netherlands Appl. No. 1011524. 			

U.S. APPLICATION NO. (known, see 37 CFR 1.53)

09/936110

INTERNATIONAL APPLICATION NO.
PCT/EP00/01348ATTORNEY'S DOCKET NUMBER
PTT-122 (402539US)21. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):**Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO. **\$1000.00**International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO **\$860.00**International preliminary examination fee (37 CFR 1.482) not paid to USPTO
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **\$710.00**International preliminary examination fee (37 CFR 1.482) paid to USPTO
but all claims did not satisfy provisions of PCT Article 33(1)-(4) **\$690.00**International preliminary examination fee (37 CFR 1.482) paid to USPTO
and all claims satisfied provisions of PCT Article 33(1)-(4) **\$100.00****ENTER APPROPRIATE BASIC FEE AMOUNT =****CALCULATIONS PTO USE ONLY**

\$ 860.00

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$ 00.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total claims	3 - 20 =	0	x \$18.00	\$ 00.00
Independent claims	3 - 3 =	0	x \$80.00	\$ 00.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				+ \$270.00
TOTAL OF ABOVE CALCULATIONS =				\$ 860.00

☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above
are reduced by 1/2. + \$ 00.00**SUBTOTAL =** \$ 860.00Processing fee of **\$130.00** for furnishing the English translation later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(f)). \$ 00.00**TOTAL NATIONAL FEE =** \$ 860.00Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **\$40.00** per property + \$ 00.00**TOTAL FEES ENCLOSED =** \$ 860.00Amount to be
refunded: \$

charged: \$

- a. ☒ A check in the amount of \$ 860.00 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
overpayment to Deposit Account No. 13-3083. A duplicate copy of this sheet is enclosed.
- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card
information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR
1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO

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SIGNATURE

Peter L. MICHAELSON

NAME

30.090

REGISTRATION NUMBER

Customer No. 007265

09/936110 "110601"

09/936110

Title: Encoding user subscription in IP address.

ARTICLE 34 Amendment

A. Background of the invention

5 The invention is related to a method for the transmission, via an IP access device and various IP routers, of IP packets, originating from users with different Quality-of-Service contracts, whereas, upon login of a user, said IP access device assigns an IP address to said user and, moreover, retrieves, from a

10 Quality-of-Service database Quality-of-Service parameters assigned to said user. It is known in the prior art, for instance from reference 1, that IP packets can be handled by IP routers differentially on the basis of the so-called IP precedence bits in the header of a packet, and that the

15 IP precedence bits can be set by an IP router at the edge of the network ("IP edge router") on the basis of various attributes of the IP packet ("classification"). It is also known that, on the basis of the precedence bits, the IP traffic of users with different service subscriptions can

20 be differentially handled ("per hop behaviour"), i.e. according to the subscription-related contract agreements. Said classification and "per hop behaviour" are the building blocks with which, in an IP network, future-determined quality guarantees can be given which are

25 required for demanding applications, such as IP telephony, IP videophony or gaming.

The prior art has the following disadvantages: (1) classification requires much processor capacity of the IP edge router, whereby, with the current technology, it is

30 deployable for far too few users simultaneously and therefore unsuitable for large-scale use, and (2) continuous adjustment of the configuration of all IP edge routers in the network is necessary, viz. upon every login or logout of a user.

35 B. Summary of the invention

routers in the network is necessary, viz. upon every login or logout of a user.

B. Summary of the invention

1. The invention seeks to obviate the said

5 disadvantages. To this end the invention provides a method for the transmission, via an IP access device and various IP routers, of IP packets, originating from users with different Quality-of-Service contracts, whereas, upon login of a user, said IP
10 access device assigns an IP address to said user and, moreover, retrieves, from a Quality-of-Service database Quality-of-Service parameters assigned to said user, executing the following steps:

15 a. said IP access device inserts, on the basis of said retrieved Quality-of-Service parameters, in said IP address assigned to the user, in a reserved IP-address space, a bit pattern which is representative for said the user's Quality-of-Service parameters;

20 b. said IP routers detect at said reserved IP-address space said bit pattern and process the IP packet according to the Quality-of-Service parameters as indicated by said detected bit pattern.

When a user logs in (for example upon establishing the PPP
25 protocol), the user name/password combination is used to search for the subscription of the user in a database. By means of a specific bit pattern in a reserved space in the IP address which is assigned to the user, it is subsequently designated which QoS-subscription the user
30 has. The bit pattern in said reserved IP-address space can be assigned to a set of applications where the IP packets will be subsequently processed according the Quality-of-Service parameters.

The IP edge routers classify each IP packet after detection
35 the bit pattern in said reserved IP-address space. For

this, a fixed setting of the IP edge routers with a limited number of (selection) rules is sufficient, whereby only little processor capacity of the IP edge router and no continuous adjustment of configuration of the IP edge routers is required.

C. Description of the diagram

The mode of operation of the invention is further explained on the basis of two figures.

Fig. 1 shows how an IP address is assigned to a user. In this example, two subscriptions are distinguished: ordinary and special. Users with a special subscription receive an IP address with the format

"xxxxxxxx.xxxxxxx.11111111.xxxxxxx", i.e. the bit pattern "11111111" in positions 17-24 counted from the left, where "x" can be a 0 or a 1. Users with an ordinary subscription receive an IP address with another bit pattern in positions 17-24. In the customary notation for the Internet, this is an address "a.b.255.d", where $0 \leq a, b, d \leq 255$, as IP address for users with a special subscription, and "a.b.c.d", where $0 \leq a, b, d \leq 255$ and $c < 255$, as IP address for ordinary users.

Fig. 2 shows how an IP address of this example is used by the IP edge router to set the IP precedence bits, in this example to the value of 0 for ordinary users and 7 for special users.

D. References

1. Beyond Best Effort: Router Architectures for the Differential Services of Tomorrow's Internet", Kumar VP et al., IEEE Com. Mag. May 1998 pp 152-164

E. Claims

1. A method for the transmission, via an IP access device and various IP routers, of IP packets, originating from users with different Quality-of-Service contracts,
- 5 whereas, upon login of a user, said IP access device assigns an IP address to said user and, moreover, retrieves, from a Quality-of-Service database Quality-of-Service parameters assigned to said user, characterised by the steps:
- 10 a. said IP access device inserts, on the basis of said retrieved Quality-of-Service parameters, in said IP address assigned to the user, in a reserved IP-address space, a bit pattern which is representative for the user's Quality-of-Service parameters;
- 15 b. said IP routers detect at said reserved IP-address space said bit pattern reserved IP-address space and process the IP packet according to the Quality-of-Service parameters as indicated by said detected bit pattern.
2. An IP access device for the transmission of IP
- 20 packets, originating from users with different Quality-of-Service contracts, comprising means (Proc1) for assigning an IP address to such a user and, moreover, for retrieving, from a Quality-of-Service database, Quality-of-Service parameters assigned to said user, characterised by means
- 25 for inserting, in a reserved IP-address space, a bit pattern which is representative for the user's Quality-of-Service parameters.
3. An IP router, for routing, on the basis of IP addresses, IP packets, originating from users with
- 30 different Quality-of-Service contracts, characterised by means (Proc2) for detecting a bit pattern in a reserved IP-address space of such IP packet, representative for the relevant user's Quality-of-Service parameters, and for processing the IP packet according to the Quality-of-

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Service parameters as indicated by said detected bit pattern.

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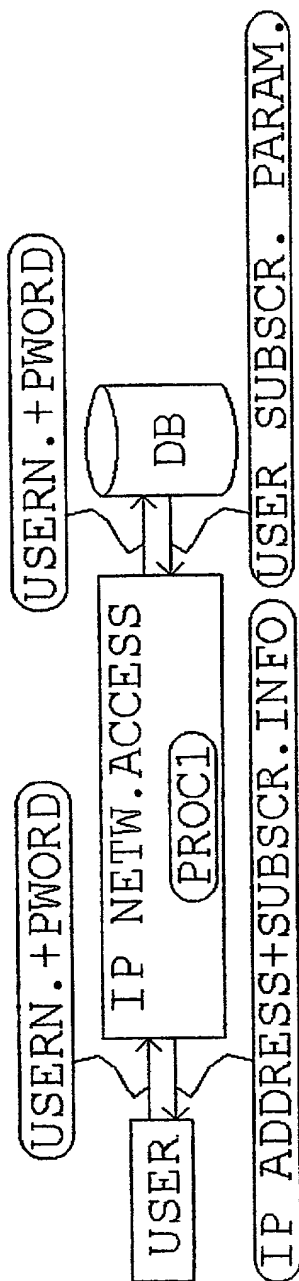


FIG. 1

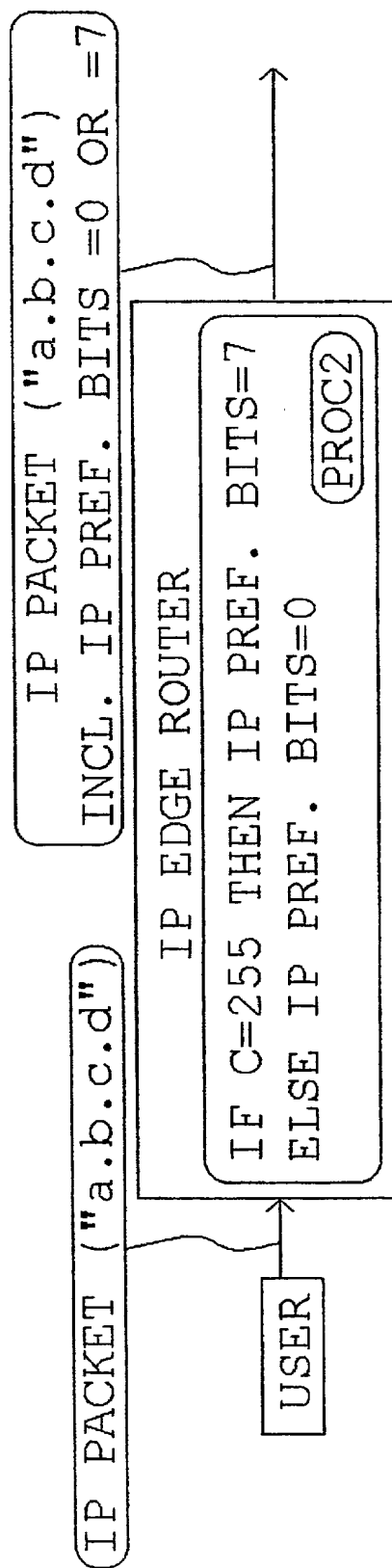


FIG. 2

Atty. Doc. No.: _____

**DECLARATION AND
POWER OF ATTORNEY**
(Utility Patent Application)

As a below named inventor, I hereby declare:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below), of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"Encoding user subscription in IP address"

the specification of which:

- ___ is attached hereto
- ___ was filed on _____ as Application Serial
No. _____ with amendment(s) filed _____
- ___ was filed as PCT international application: PCT/EP00/01348 ✓
and was amended under PCT Article 19

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations section 1.56.

I hereby claim foreign priority benefits under Section 119 of Title 35, United States Code for the above-identified US patent application based on the patent or inventor's certificate identified below and having a filing date before that of the US patent application for which priority is claimed:

Priority Claimed

Application No Country Filing Date under 35 USC 119

1011524,	NL ✓	March 10, 1999 ✓	YES
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I hereby claim the benefit under Section 120 and/or Section 119(e) of Title 35 of the United States Code of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by Section 112 of Title 35 of the United States Code, I acknowledge the duty to disclose material information, as defined in Section 1.56 of Title 37 of the Code of Federal Regulations, which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Status

<u>Application Serial No.</u>	<u>Filing Date</u>	<u>Patented</u>	<u>Pending</u>	<u>Abandoned</u>
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Power of attorney:

093610 110601

As a named inventor, I hereby appoint:

10 -
Peter L. Michaelson (Reg. No. 30,090)
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as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office in connection therewith.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Signature: MAR

Date: September 5, 2001